



COMPOUND COMPOSITE ODONTOME OF POSTERIOR MAXILLA – A CASE REPORT

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ABSTRACT

The World Health Organization (WHO) classifies odontomas as odontogenic tumors, consisting of odontogenic epithelium and ectomesenchyme. They result from developmental abnormalities and, therefore, do not constitute authentic tumors. It is a local malformation that has no growth autonomy. They are rarely symptomatic and are usually discovered accidentally during the realization of a radiographic examination. There are two variants of odontomas: complex and compound. The aim of this work is to report a case of an odontoma in a 27-year-old male patient, which present the characteristics of compound variant. Surgical excision of the lesion was performed. Histopathological examination confirmed the diagnosis.

KEYWORDS : Developmental abnormality, Local malformation, Compound Odontoma

INTRODUCTION

Odontomas are the most common odontogenic tumors of the jaws in an interval of 35%–76% and characterized by their not so aggressive character.¹ Their discovery is usually by accident during routine radiological examinations given their asymptomatic evolution in most cases.² At the beginning of their discovery, odontomas were considered true tumors. But very quickly, this appellation disappeared to be replaced by the notion of hamartomas malformations as they develop from odontogenic epithelium and ectomesenchyme components, with the capacity of forming enamel, dentin, and cementum.³ The etiopathogenesis of these tumors is unknown. However, trauma in primary dentition, periodontal Malassez remains, inflammatory processes, odontoblastic hyperactivity, and hereditary anomalies are considered as possible etiological factors.² The World Health Organization (WHO) classified odontomas into two variants: compound and complex.⁴ The compound form consists of all the tissue structures involved in the formation of the teeth; these different tissue structures can be associated with each other to form a variable number of tooth-like structures, called "odontoids." Although, a complex odontoma is a malformation in which all dental tissues are represented and arranged in an anarchic way.⁴ The complex odontomas appear to be more common than composite odontomas.³ The distribution between sexes is approximately equal, and the average age of the patients is between 20 and 30 years in most studies.⁵ Complex odontomas occur commonly in posterior region of the mandible, while compound odontomas occur principally in the anterior part of the maxilla.³ However, odontomas rarely show both radiological and histological features of compound and complex types together and this type of odontoma is known as compound-complex odontoma in the literature.⁵

We aim to present a case of a compound odontoma, occurring in the posterior maxilla in a young patient. First, the radiographic examination and later the histopathological examination confirmed the diagnosis.

CASE REPORT

A 27-year-old-male patient reported to the OPD with the chief complain of pain in maxillary right posterior region of jaw since past 4 days. Patient's medical and family history were inconclusive. Extraorally, the face was bilaterally symmetrical. On intra oral examination, caries was seen to be associated with 18. The surface was smooth and tenderness was present. The OPG revealed radio opaque round structure present on periapical region of 18.



Figure 1- OPG showing opaque round structure present on periapical region of 18.

Based on the clinical and radiographic examination, a provisional diagnosis of compound odontome was made. The lesion was surgically excised under the influence of local anaesthesia. It was sent for histopathological evaluation.

On gross examination, the tissue was found to be grayish white in colour, oval in shape, hard in consistency and measuring 0.9*0.7*0.3 cm in diameter.



Figure 2- Gross examination showing grayish white coloured tissue

The H & E stained decalcified section revealed an organized eosinophilic mineralized tissue resembling dentine with many small rounded spaces (dental tubules). Small spaces which is filled with loose connective tissue resembling pulp spaces are seen at focal areas. On outer aspect of dentine pale haematoxyphilic tissue is seen resembling enameloid. These microscopic findings too confirmed the provisional diagnosis of compound odontome.

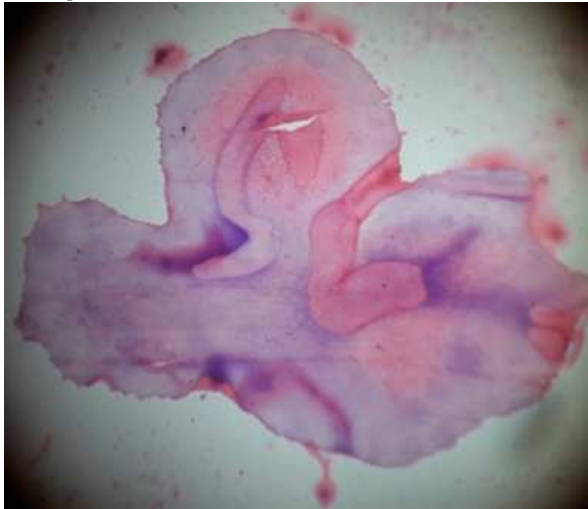


Figure 3- The H & E stained decalcified section revealing an organized eosinophilic mineralized tissue.

DISCUSSION

Odontomas are nonaggressive, hamartomatous developmental malformations or lesions of odontogenic origin appearing as small, solitary, or multiple radiopaque lesions found on routine radiographic examinations⁶. They are the most common odontogenic tumors which constitute 22% of all the odontogenic tumors of the jaws⁷.

The etiology of odontomes remains unknown⁸. It has been associated with various pathological conditions, like local trauma, inflammatory and/or infectious processes, mature ameloblasts, cell rests of Serres (dental lamina remnants) or hereditary anomalies (Gardner's syndrome and Hermann's syndrome), odontoblastic hyperactivity, and alterations in the genetic component responsible for controlling dental development⁹.

Gabell et al. in 1914, grouped odontomes according to their developmental origin into: epithelial, composite (epithelial and mesodermal) and connective tissue^{10,11}. According to 2005 WHO classification of odontogenic tumours, there are two types of odontomas, compound and complex odontomas¹². Clinically, they are classified as intraosseous (central), peripheral (soft tissue or extraosseous), and erupted odontomas. The central (intraosseous) odontomas are common representing 51%, occurring in anterior maxilla (compound odontoma) followed by mandibular molar region (complex odontoma). Peripheral odontomas are rare and occur in the soft tissue over the tooth-bearing zone and most reported ones are of compound variety. The erupted odontomas are the ones which are present coronal to an erupting or impacted tooth or superficially in bone and may have enabled its eruption into the oral cavity.^{13,14,15}

WHO defined a compound odontoma as a malformation in which all the dental tissues are represented in a more orderly pattern so that the lesion consists of many tooth like structures. Most of the structures do not morphologically resemble the teeth of the normal dentition but, in each one enamel, dentin, cementum, and pulp, are arranged as in the normal tooth¹⁶. Complex odontomes are seen less common in comparison with compound variety in the ratio 1:2¹⁷.

The incidence of compound odontome ranges between 9% and 37%. Most of the odontomas in the anterior segment of the jaws are compound composite in type (61%), whereas the majority of odontomas in the posterior segment are complex composite in type (34%)^{8,17}. Interestingly, both types of odontomas occurred more frequently on the right side of the jaw than on the left, (compound 62% and complex 68%)^{8,18,19}. The compound composite odontome most frequently occurred in incisor cuspid region of the upper jaw in contrast to the complex odontomes which were commonly found in molar and premolar region of the mandible^{18,19,20,21}. In our case, compound odontome was located in posterior maxillary region which is quite rare condition.

Radiographic examination is the most effective clinical method of differentiating between the two types of odontomas^{22,23}. Compound odontoma, which radiographically shows comparatively a well-organized malformed teeth or tooth-like structures, usually is a radiolucent cyst like lesion whereas complex odontoma shows an irregularly shaped oval radiopacity usually surrounded by a well-defined thin radiolucent rim.^{23,24}

The case described in this report was initially diagnosed as compound odontoma based on the radiographic findings. This diagnosis was later confirmed by histopathologic examination of the lesion (Figure 3).

CONCLUSION

Limited growth potential is shown by an odontome, but it should be removed because it consists various tooth formulations that can predispose to cystic change.

Early diagnosis of odontomas helps us to adopt a less complex and even less expensive treatment, it ensure better prognosis, avoid relapse of the lesion and avoid displacement or devitalisation of adjacent tooth.

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